

REMARKS

Claims 1-8 are pending in the application, are rejected, and are at issue with withdrawn claims 9-32 being canceled by this Amendment.

Applicant traverses the rejection of claims 1-8 as obvious over Perdue et al. U.S. Patent No. 5,973,637 in view of European Standard EN 50020.

Independent claim 1 is amended to specify a process instrument comprising a housing and a level sensing probe comprising a transmission line for sensing a characteristic of a process represented by an impedance change on the transmission line. A control circuit is disposed in the housing and is electrically connected to the probe for measuring the sensed characteristic comprising a pulse circuit connected to the probe for generating a very fast stream of pulses on the transmission line at a select operating frequency and receiving reflected pulses returned on the transmission line. The reflected pulses represent impedance changes. A safety barrier comprises a blocking capacitor barrier electrically connected between the control circuit and the probe so that the safety barrier comprises a portion of the transmission line providing impedance matching at the select operating frequency.

No proper combination of the references comprises a process instrument with a safety barrier comprising a portion of a transmission line providing impedance matching at a select operating frequency.

Perdue et al. discloses a process instrument including a probe and a control circuit. The process instrument does not include a safety barrier. More particularly, it does not include a

safety barrier comprising a portion of a transmission line providing impedance matching at a select operating frequency.

The European Standard generally discusses the concept of using blocking capacitors for intrinsic safety. Intrinsic safety limits energy to prevent sparks from occurring in hazardous environments. Typically, this is done by limiting energy in a wiring compartment which is explosion proof. While blocking capacitors for intrinsic safety are known, it is not known, nor does the standard suggest, that blocking capacitors could be used as part of a transmission line. In the claimed invention, any impedance change on the transmission line affects operation of the control circuit. The addition of any impedance device to the circuit would provide some impedance change. Thus, it is not apparent to use a blocking capacitor barrier in a transmission line, as set forth in the claim. While one skilled in the art could simply place a blocking capacitor in the circuit, as suggested in the action, doing so would have an adverse effect on operation of the control circuit. Thus, it is not obvious that a blocking capacitor barrier can be used as part of a transmission line. Thus, the proposed combination might provide a safer circuit, but it will not produce usable measurements.

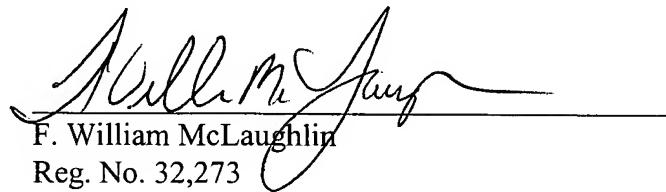
For the above reasons, independent claim 1 and dependent claims 2-5 are not obvious.

Independent claim 6 specifies a process instrument including a safety barrier comprising a plurality of series connected capacitors electrically connected between the control circuit and the probe so that the safety barrier comprises a portion of the transmission line providing impedance matching at the select operating frequency. Claim 6 and dependent claims 7 and 8 are also believed allowable for the reasons discussed above.

For the above reasons, claims 1-8 are believed allowable and withdrawal of the rejection is requested.

Reconsideration of the application, allowance and passage to issue are requested.

Respectfully submitted,



F. William McLaughlin
Reg. No. 32,273

Date: April 27, 2004

WOOD, PHILLIPS, KATZ,
CLARK AND MORTIMER
Citicorp Center, Suite 3800
500 W. Madison Street
Chicago, IL 60661-2511
(312) 876-1800